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Hazard Tree Evaluation, Herman Creek Trailhead,
Columbia Gorge RD

Forest Supervisor, Mt. Hood NF

On February 2, Gregory M. Filip, Plant Pathologist from Forest Pest Management of the Regional Office, Portland, visited the proposed Herman Creek Trailhead on the Columbia Gorge Ranger District. Purpose of the visit was to examine the site for potentially hazardous trees within the boundaries of the proposed site. He was accompanied by John Robbins, District Landscape Architect.

The proposed Herman Creek Trailhead is approximately six acres and is located on a bench above the Columbia River near the Columbia Gorge Work Center. The intended purpose of the site is for both overnight and day use, especially for recreationists using the Pacific Crest Trail. The stand on the site is composed almost entirely of second-growth Douglas-fir ranging from 10 to 24 in. DBH. A few scattered big-leaf maples occur throughout the site.

Examination of the site revealed several signs and symptoms of laminated root rot throughout the eastern two-thirds of the site which is intended for overnight use. Immediately obvious were the scattered overturned stumps of trees that had been windthrown over several years. A few trees had recently toppled from the Christmas storm. All upturned stumps exhibited major roots that were broken and severely decayed. Upon closer examination of the decay, laminated, pitted wood with setal hyphae was found. These characteristics are diagnostic for the fungus, *Phellinus weirii*, causal agent of laminated root rot. Also scattered throughout the stand were dead trees and trees with thin crowns. Root examination of these trees always revealed the presence of ectotrophic mycelium of *P. weirii*.

The western third of the area, the old building site which is intended for day use only, did not have signs of laminated root rot. However, four or five trees had dead tops and poor crowns. Increment boring revealed no internal decay, but these trees had been growing at a very slow rate for the last ten years. Affected trees appeared to be suffering from stress as a result of soil compaction or site disturbance, probably as a result of several decades of abuse. If the site is further developed, these trees probably should be removed since they have a high probability of failure.

Laminated root rot is the most serious forest disease in the Douglas-fir sub-region. The fungus spreads from tree to tree and generation to generation across root contacts from infected trees to healthy trees. Stumps of dead or harvested trees may harbor viable mycelium for 50 or more years, depending on stump size. All trees within 50 feet of confirmed infected trees have a high probability of being infected also. Laminated root rot is of particular concern in developed recreation sites because infected trees have decayed root systems and butt rot and thus are highly prone to failure as windsnap or windthrow.

The following alternatives for reducing damage caused by laminated root rot and subsequent tree failure are presented in increasing order of effectiveness, cost, and visual impact for the infected portion of the proposed site:

1. Do nothing. If the site is developed as intended, and nothing is done to reduce potential damage caused by the disease, the fungus will continue to spread within the stand. Newly infected trees will eventually exhibit crown symptoms or fail before crown symptoms are evident. Permanent structures, recreationists, and/or their property will have a high probability of being struck by windthrown trees, especially during periods of high winds that are frequent during the winter. Since laminated root rot has been detected on the Herman Creek site, this could place the Forest Service in a very tenuous legal situation if nothing is done and an infected tree is involved in an accident. Legal opinions should be sought before choosing the do nothing alternative.

2. Winter closure. Closing of the site to recreationists during the winter will decrease the probability of damage to recreationists and/or their property. However, the probability of damage to permanent structures will not decrease. The reason for winter closure is, many but by no means all root-rotted trees fail during winter storms.

3. Day Use Only. Limiting the site to day use only will decrease the probability of damage to recreationists and/or their property by decreasing occupancy time and the type of recreationist use.

4. Annual Removal of Dead and Dying Trees. Annual removal of dead and dying trees will eliminate trees that are most likely to fail. However, trees without obvious above-ground symptoms are probably infected and have a high probability of failure. Also, as more and more trees are removed and the stand is opened, windthrow will increase, and eventually all dominant trees will be eliminated.

5. Initial Removal of All Large-Diameter Douglas-firs. This will eliminate those trees that have the potential to cause the most damage should they fail. Hardwoods are immune to infection and can be left on the site. Infection and resultant windthrow will occur in the smaller firs that are left, but damage potential will be reduced. This alternative would result in the greatest change in the visual appearance of the natural stand, except for a clearcut.

No single alternative will serve to acceptably reduce the seriousness of the potential hazard tree situation in the proposed Herman Creek Trailhead. A combination of Alternatives 2, 3, and 5 may be required at the minimum if the site is to be developed as intended. Even with these, windthrow will still be a chronic problem on the site. Another possible alternative would be to locate the overnight use area in the western third of the site that is uninfected. The infected eastern portion would be for day use only.

In closing, we strongly recommend that the District consider not developing the site as intended because of laminated root rot and subsequent tree failure which will only excelerate with time.

If FPM can be of further service, please contact us.

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cc:
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